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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,729	10/30/2003	David L. A. Anson	MS#305263.01 (5078)	7718

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EXAMINER	
CHUNG, DANIEL J	
ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,729	ANSON, DAVID L. A.	
	Examiner	Art Unit	
	Daniel J Chung	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8-17,19-26 and 28-31* is/are rejected.

7)☒ Claim(s) *6,7,18 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10-30-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

Receipt is acknowledged of Applicant's Information Disclosure Statement of 10-30-2003, which has been placed in the application file and considered by the Examiner.

Drawings

The drawings are not objected to by the Examiner.

Specification

Please review the application and correct all informalities.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims1-5,8-9,11-17,19-26 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Jia et al. (6,430,320)

Regarding claim 1, Jia et al discloses that the claimed feature of a computerized method for processing an image [i.e. "scanned document"] obtained by scanning, image

including at least a plurality of pixels, pixels each having a value representative of an optical characteristic of a scanned object, method comprising; identifying a plurality of pixels [i.e. "edge pixel", "pixels"; 520,521,522,524] along at least one edge portion of the image as a function of the pixel values [i.e. "luminance values"] (See Fig 5, Fig 9B, Fig 9C, Fig 11-12, col 3 line 9-24, col 9 line 46-65, col 13 line 25-33, col 13 line 49-col 14 line 2, col 14 line 66-col 15 line 34); defining one or more edges [i.e. "edge segment"; 510,512,514,516] of the image from the identified pixels (See Fig 5, Fig 11-12, col 3 line 9-24, col 9 line 54-58, col 13 line 25-33, col 13 line 49-col 14 line 2, col 14 line 66-col 15 line 34); determining an orientation [i.e. "skew angle"; α] of the image relative to a target orientation as a function of the defined edges ["edge segment"] (See Fig 9B, col 3 line 9-24, col 13 line 33-35, col 8 line 32-36, col 9 line 66-col 10 line 4); and adjusting [i.e. "deskew function"; 322,834] the orientation of the image portion to correspond to the target orientation. (See Fig 9A, Fig 14B)

Regarding claim 2, Jia et al discloses that identifying the pixels along the edge portion of the image includes distinguishing the edge portion [i.e. "edge segment"; 1200,1202]of the image from a border portion of the image adjacent the edge portion, pixels [i.e. "image pixels"; 1070,1106] along the edge portion of the image having substantially different pixel values than pixels [i.e. "background pixel"; 1080] in the border portion of the image. (See Fig 11-12, col 14 line 66-col 15 line 34)

Regarding claim 3, Jia et al discloses that cropping the adjusted image to eliminate the border portion. [i.e. "crop function"; 322,830] (See Fig 9A, Fig 14)

Regarding claim 4, Jia et al discloses that defining the edges ["edge segment"] of the image includes matching the identified pixels ["edge pixels"] to a predefined shape [i.e. rectangular shape]. (See Fig 5, col 10 line 5-23)

Regarding claim 5, Jia et al discloses that the image is a substantially rectangular shape [502] having four corners, and wherein identifying the pixels [520-522] along the edge portion of the image includes processing the image as a function of pixel values to identify corners of the image. (See Fig 5, Fig 9B, Fig 9C, Fig 11-12, col 3 line 9-24, col 9 line 46-65, col 13 line 25-33, col 13 line 49-col 14 line 2, col 14 line 66-col 15 line 34)

Regarding claim 8, Jia et al discloses that analyzing each column to identify a horizontal transition point at which pixels transition from a first value to a second value, first and second values being substantially different from each other; grouping the horizontal transition points to identify top and bottom edges of the image. ["steps 908-928" in Fig 9B] (See Fig 5, Fig 9B, Fig 11-12)

Regarding claim 9, Jia et al discloses that analyzing each row to identify a vertical transition point at which pixels transition from a first value to a second value, first and second values being substantially different from each other; and grouping the

vertical transition points to identify left side and right side edges of the image. ["steps 930-952" in Fig 9C] (See Fig 5, Fig 9C, Fig 11-12)

Regarding claim 11, Jia et al discloses that defining a reference axis [i.e. 'x, y axis']; grouping the identified pixels ["edge pixels"; 520-524] to define an outline of the image ["edge segment"; 510-516]; comparing the defined outline to the reference axis; and determining an orientation error ["deskew angle"] between the determined orientation of the image and the target orientation as a function of the comparison. (See Fig 5, Fig 9)

Regarding claim 12, Jia et al discloses that rotating ["deskew function"] the image about the identified point of rotation in response to the determined orientation error. (See Fig 9B, col 3 line 9-24, col 13 line 33-35, col 8 line 32-36, col 9 line 66-col 10 line 4)

Regarding claim 13, Jia et al discloses that the adjusting includes sizing the image to correspond to a target size [i.e. "requested size"; 1336]. (See Fig 13, col 17 line 24-27)

Regarding claim 14, refer to the discussion for the claim 1 hereinabove, Jia et al further discloses that computer-executable instructions ["instruction"]. (See col 5 line 25-36)

Regarding claim 15, claim 15 is similar in scope to the claims 1-3, and thus the rejections to claim 1-3 hereinabove are also applicable to claim 15.

Regarding claim 16, claim 16 is similar in scope to the claim 4, and thus the rejection to claim 4 hereinabove is also applicable to claim 16.

Regarding claim 17, claim 17 is similar in scope to the claim 5, and thus the rejection to claim 5 hereinabove is also applicable to claim 17.

Regarding claim 18, claim 18 is similar in scope to the claim 6, and thus the rejection to claim 6 hereinabove is also applicable to claim 18.

Regarding claim 19, claim 19 is similar in scope to the claim 8, and thus the rejection to claim 8 hereinabove is also applicable to claim 19.

Regarding claim 20, claim 20 is similar in scope to the claim 9, and thus the rejection to claim 9 hereinabove is also applicable to claim 20.

Regarding claim 21, claim 21 is similar in scope to the claims 11 and 13, and thus the rejections to claims 11 and 13 hereinabove are also applicable to claim 21.

Regarding claim 22, claim 22 is similar in scope to the claim 12, and thus the rejection to claim 12 hereinabove is also applicable to claim 22.

Regarding claim 23, claim 23 is similar in scope to the claims 1 and 3, and thus the rejections to claim 1 and 3 hereinabove are also applicable to claim 23.

Regarding claim 24, claim 24 is similar in scope to the claim 2, and thus the rejection to claim 2 hereinabove is also applicable to claim 24.

Regarding claim 25, claim 25 is similar in scope to the claim 4, and thus the rejection to claim 4 hereinabove is also applicable to claim 25.

Regarding claim 26, claim 26 is similar in scope to the claim 5, and thus the rejection to claim 5 hereinabove is also applicable to claim 26.

Regarding claim 27, claim 27 is similar in scope to the claim 6, and thus the rejection to claim 6 hereinabove is also applicable to claim 27.

Regarding claim 28, claim 28 is similar in scope to the claim 8, and thus the rejection to claim 8 hereinabove is also applicable to claim 28.

Regarding claim 29, claim 29 is similar in scope to the claim 9, and thus the rejection to claim 9 hereinabove is also applicable to claim 29.

Regarding claim 30, claim 30 is similar in scope to the claims 11 and 13, and thus the rejections to claims 11 and 13 hereinabove are also applicable to claim 30.

Regarding claim 31, claim 31 is similar in scope to the claim 12, and thus the rejection to claim 12 hereinabove is also applicable to claim 31.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jia et al in view of Kulkarni et al. (6,360,026)

Regarding claim 10, Jia et al does not specifically discloses that applying a Laplacian filter to each pixel to identify one ore more transition points between adjacent pixels. However, such limitation is shown in the teaching of Kulkarni et al. [i.e. "apply

filter to bitmap image"; See step 602 in Fig 6, col 11 line 4-31] It would have been obvious to one skilled in the art to incorporate the teaching of Kulkarni et al into the teaching of Jia et al, in order to "allow a user to adjust the values of a pixel or a group of pixels...thereby speeding performance" (See col 11 line 4-9 in Kulkarni et al), as such improvement is also advantageously desirable in the teaching of Jia et al for performing the deskew/crop function with optimized manner.

Allowable Subject Matter

Claims 6-7, 18 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowable subject matter: The present invention is directed to method for adjusting a digital image obtained from scanning a document. The above identified claims includes the uniquely distinct features "defining a plurality of at least substantially diagonal processing lines relative to the target orientation, each processing line having a first position tangentially aligned to different corner of the image; repositioning each of the processing lines a predetermined distance towards a center of the target orientation until each of the processing lines intersects one of the pixels having a pixel value substantially different than previously processed pixels; and recording a location of each of the intersected pixels" and "defining at least one horizontal processing line relative to the target orientation,

horizontal processing line having a first position coincident with a top side or a bottom side of the image; defining at least one vertical line relative to the target orientation, vertical processing line having a first position coincident with a right side or a left side of the image; repositioning each of the horizontal and vertical lines a predetermined distance towards a center of the target orientation until each of the processing lines intersects a pixel having a pixel value substantially different than previously processed pixels; and recording a location of each of the intersected pixels" The closest prior art, Jia et al (US 6,430,320) discloses a similar system, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Chung whose telephone number is (571) 272-7657. He can normally be reached Monday-Thursday and alternate Fridays from 7:30am- 5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael, Razavi, can be reached at (571) 272-7664.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (Central fax)

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

djc
March 29, 2005